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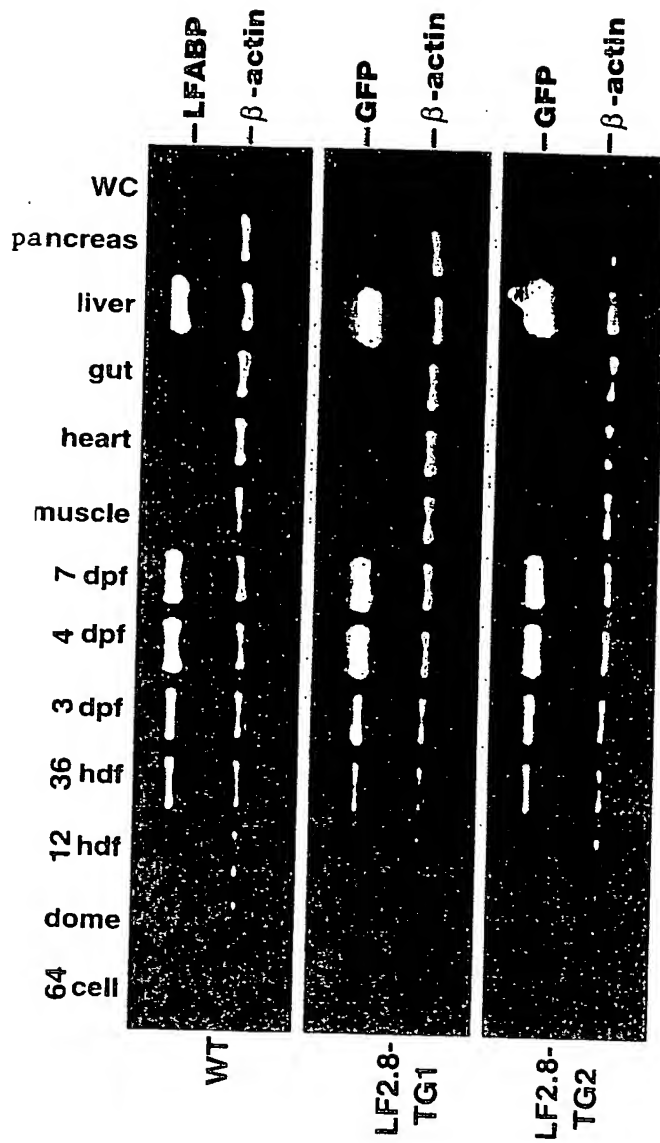


Figure 1

Inventor: Jen-Leih WU et al.  
 Title Transgenic Fish Germline Expression Drive by Liver Fatty  
 Acid Binding Protein (L-FABP) Gene Promoter and  
 Applications Thereof  
 Attorney Docket No.: 33151-188802

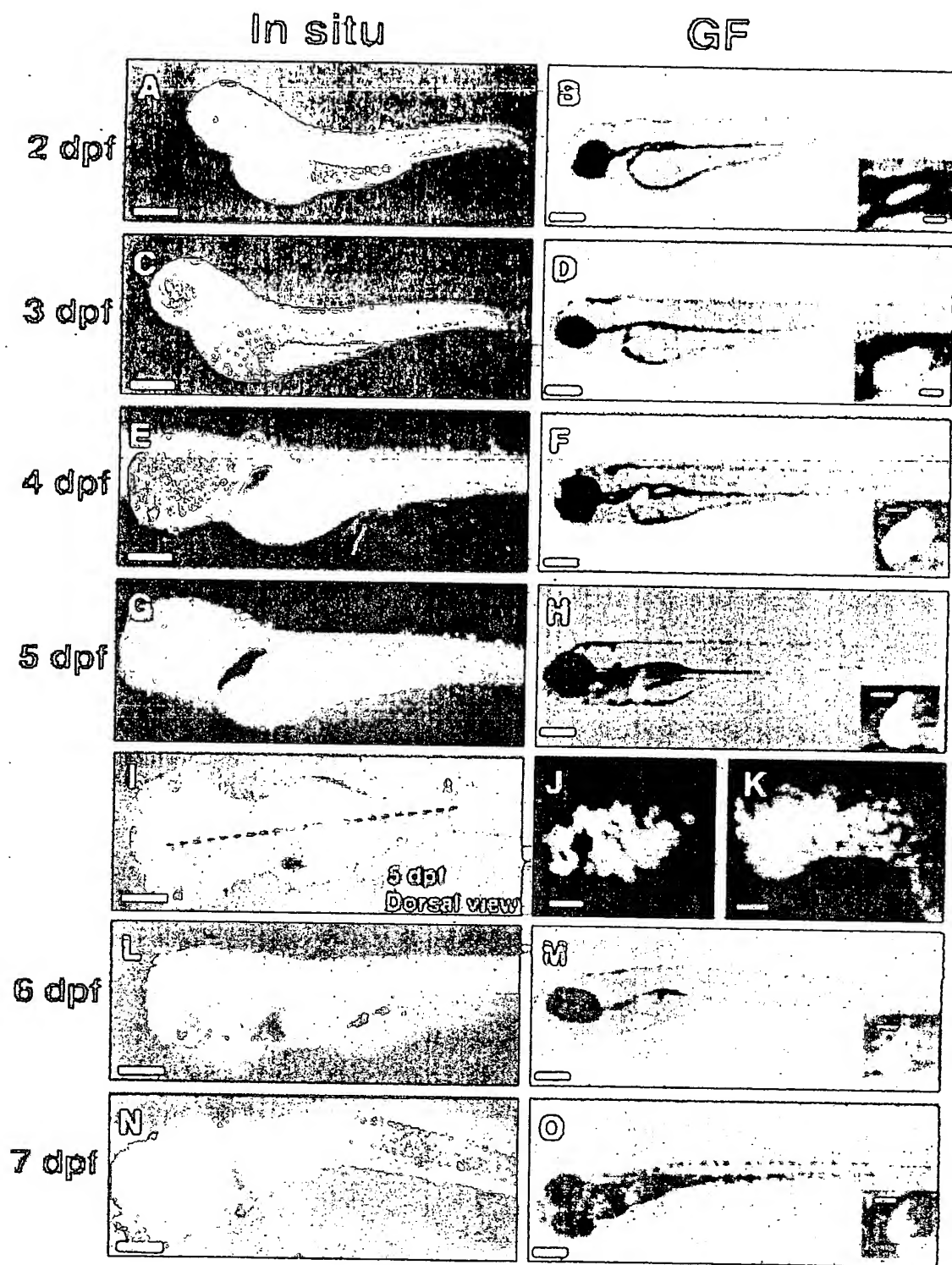


Figure 2

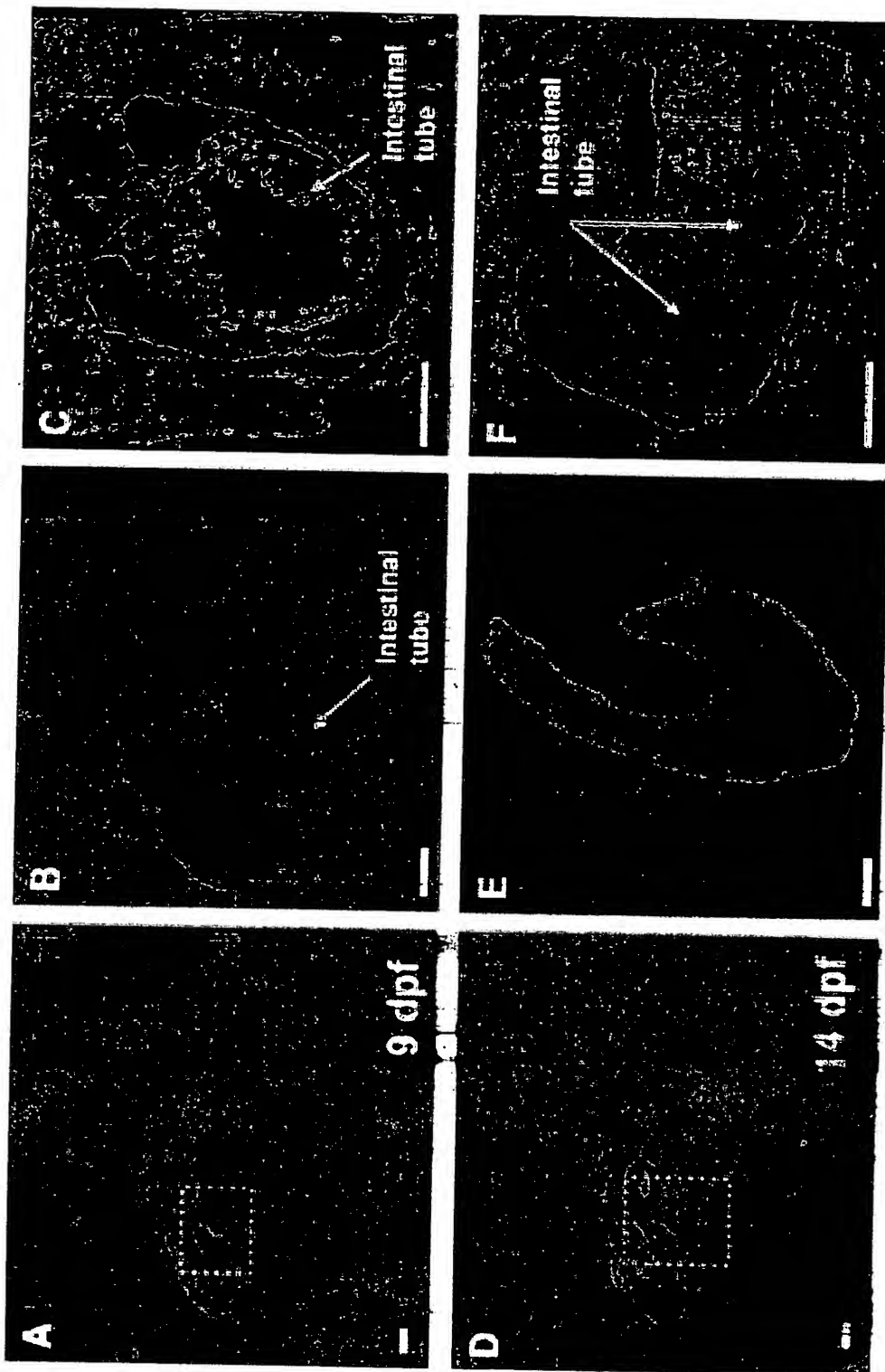


Figure 3

Inventor: Jen-Leih WU et al.  
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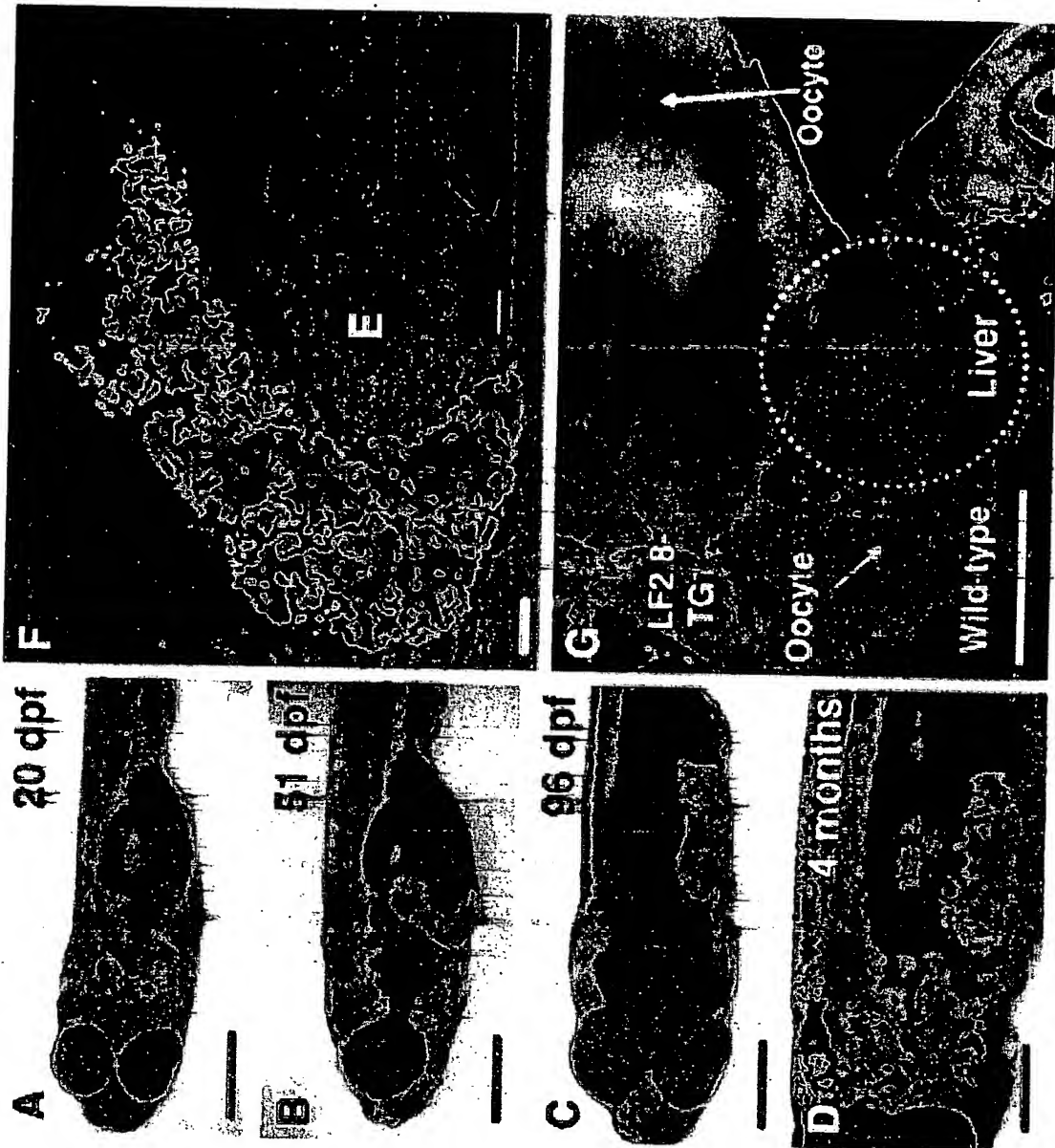


Figure 4

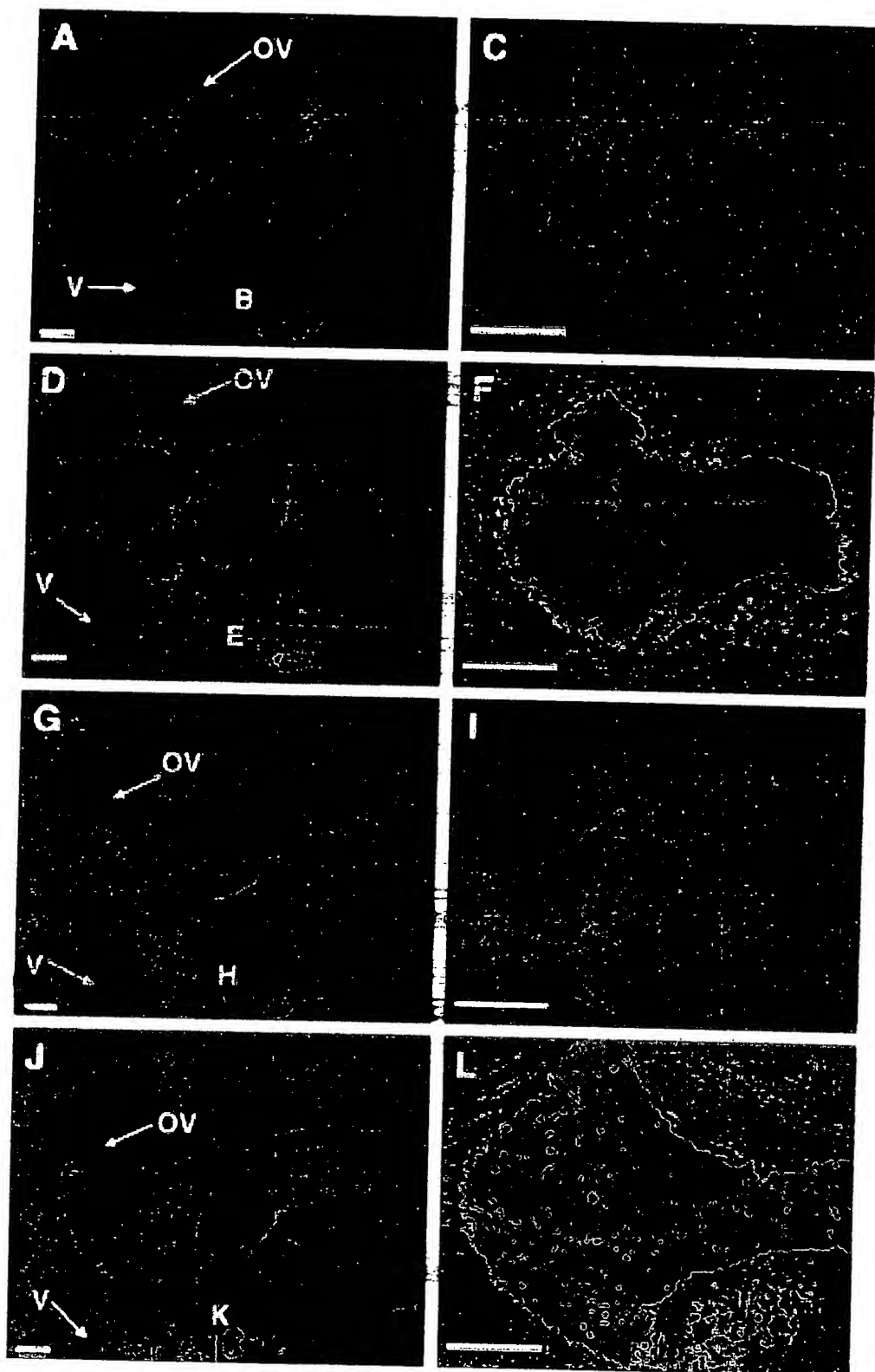


Figure 5

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 Title Transgenic Fish Germline Expression Drive by Liver Fatty  
 Acid Binding Protein (L-FABP) Gene Promoter and  
 Applications Thereof  
 Attorney Docket No.: 33151-188802

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aaactcctgg	aaaaaccgtc					2960

(SEQ ID NO: 2)

Figure 6





**A**

LFABP upstream region



GFP Intensity

Liver Others

LF2.8	+++	+	-
LF2.5	+++	+	-
LF2.0	+++	+	-
LF1.8	+++	+	++
LF1.5	-	-	++
LF1.2	-	-	++
LF1.0	-	-	+
LF0.8	-	-	-
LF0.5	-	-	-

250bp

**B**

LF2.8-EGFP

**C**

LF2.5-EGFP

**D**

LF2.0-EGFP

**E**

LF1.8-EGFP

**F**

LF1.2-EGFP

**G**

LF0.8-EGFP

Figure 8

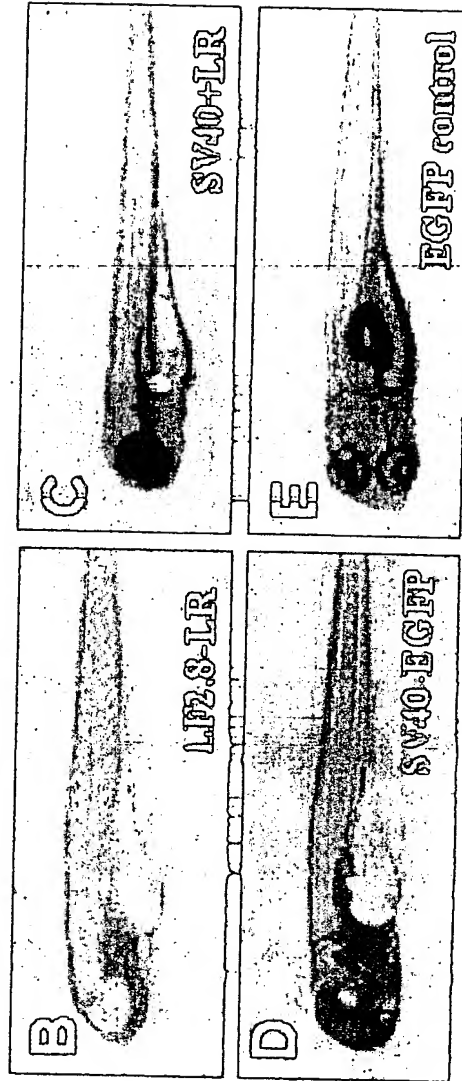
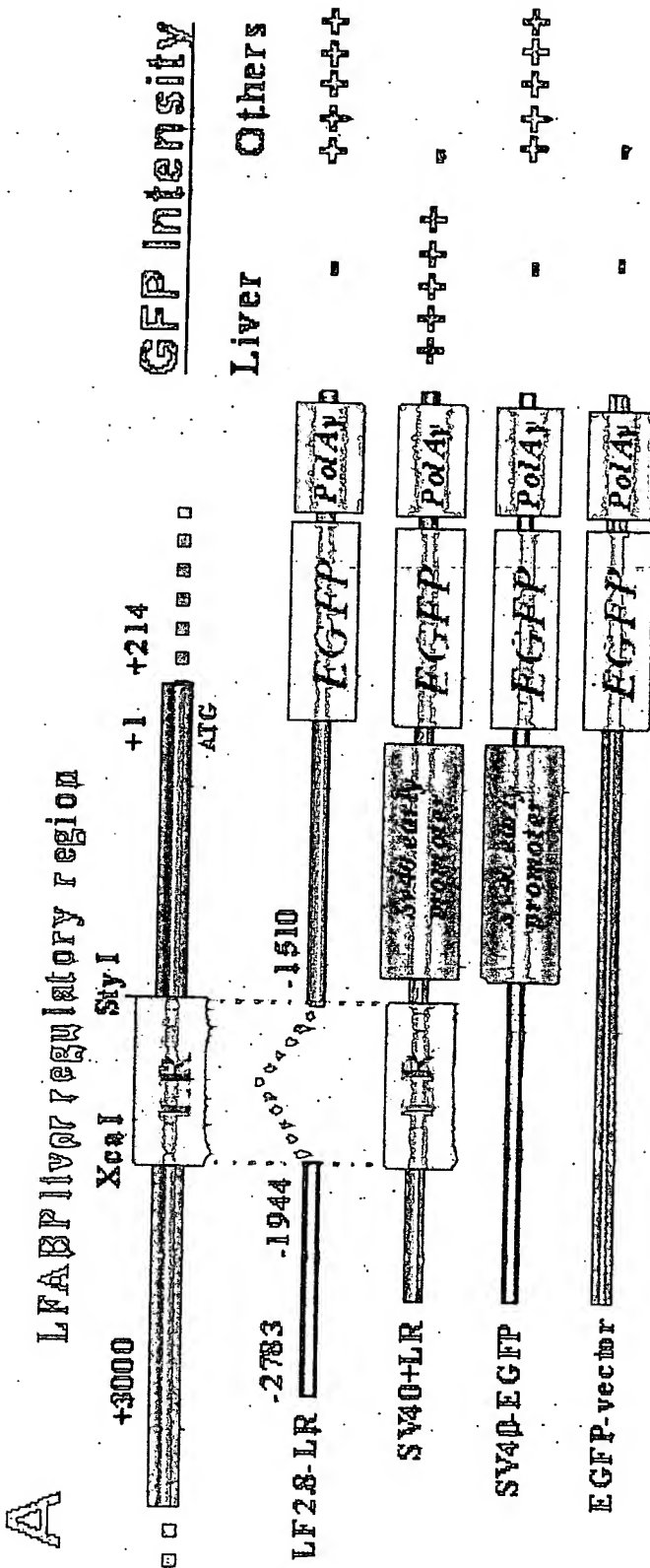


Figure 9

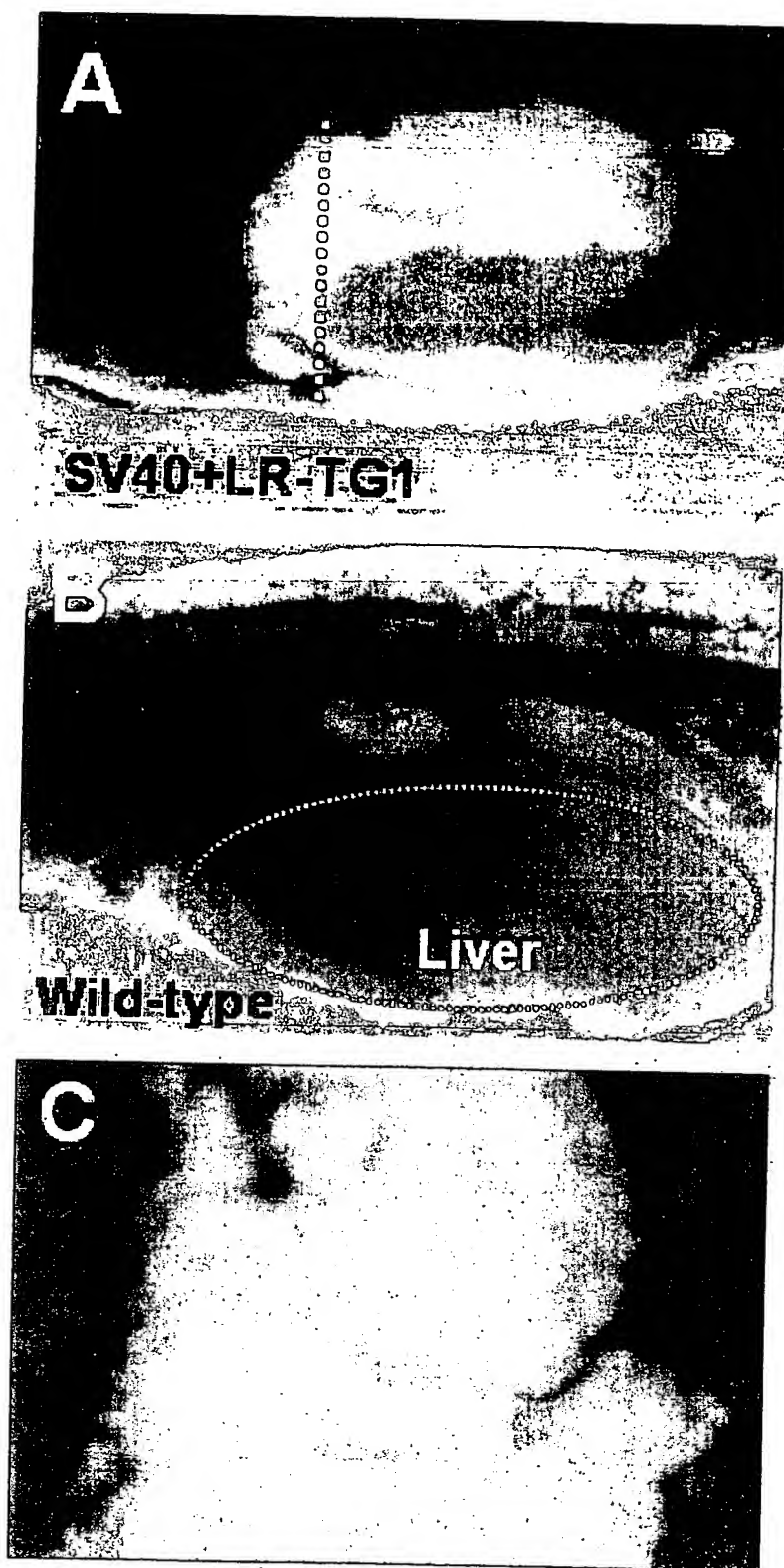


Figure 10

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 Title Transgenic Fish Germline Expression Drive by Liver Fatty  
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## Liver regulatory element

```

-1983 AAGCTATTTT TTTCGATAG TCTACAGAAC AAACCATCGG TATACAAATGA CTTCGCCCTTATTCCTTATCC TGCCTAGTTA
-1903 CCTTTTAAATG CCTTTAAATG TCACTTTAAG CTGTATAGAA GTGTCITTGAA GAATATCTAG TCTAATATTA
      PDX1/ISL1(2)
-1823 TTGACTGTCA TCATGGCAAA GATAAAATAA ATCAGTTATT AAAACTATTA TGATTAGAAA TGTGCTGAAA CAATCTGCTC
      PDX1/ISL1(1)
      -1944
      HFH(1)
      HFH(2)
-1663 TGATGTCTGC AAAACTGTTG CAAATATTTTAAATGTTGTTG ATTTTATGCTTAACTTAAATTTTAA ATTTAATAAA ATACAACTTA
      HNF1-α
      HNF3β
-1583 ATCTGTTTGT TTAAATTCAG CCCTAATAAA TTGTTTACAG CCACITTAACG TAAAAAAATT GAGTAAATCC AAGGAATCAT

```

Figure 11

-1510

(SEQ ID NO:1)

Inventor: Jen-Leih WU et al.  
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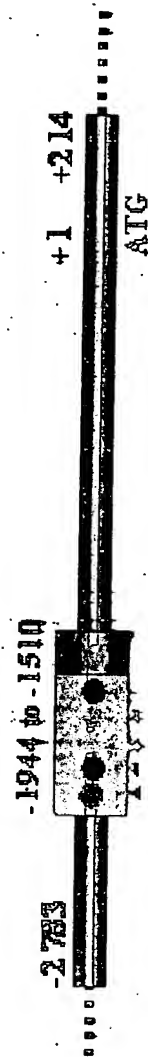
**A**

```

-1983 AAGCTATTTT TTTTCGATG TCTACAGAC AAACCATCGG TATACAAATGA CTTCGGTAT TRCCCTARCC TGCCTGCTT
-1903 CCCTATTTTAT GGGGTTTAA G CTTTAAATG TCAATTTAA G CTGTATAGAA GTGCTTGGAA GAATATCTAG TCTAATATTA
      PDX1/ISL1(2)
-1823 TTGACGCTCA TGTATGGCAA GATAAATAA ATCAGTTATT AAACTATTA TGCTGAGAA TGTCTGAAA CAGTGTCTC
-1743 TCCGATTTTAT AGGATATGA CAAATTTTAT AGGATATGA ATAAATTA GGGCTTAAAT AATTCGTATT GCATATATTA
      HNF(1)
-1663 TGTATGCTG CAAATTTTAT ATTTGTTTG ATTTTATGA ARCTTTTAT ATTTATATA ATCAACTTA
      HNF-1α
-1583 ATCTGTTTGT TTAATTTAG CCTAATATA TTGTTTACAG CCATTTAAG TAAAAAAT GACTAATCC AAGGAATCAT
      HNF-3β
  
```

(SEQ ID NO: 30)

**B**



**GFP Intensity**

	SV40-PDX1(1)	SV40-PDX1(2)	SV40-HFH(1)	SV40-HFH(2)	SV40-HNF-1α	SV40-HNF-3β	SV40-A	SV40-B
EGFP	+	+	+	+	+	+	+	+
PolyA	+	+	+	+	+	+	+	+
Liver	+++	+++	+++	+++	+++	+++	+++	+++
Others	+	+	+	+	+	+	+	+

○: PDX1 ○: HFH ●: HNF1-α ○: HNF-3β X: mutation

Figure 13

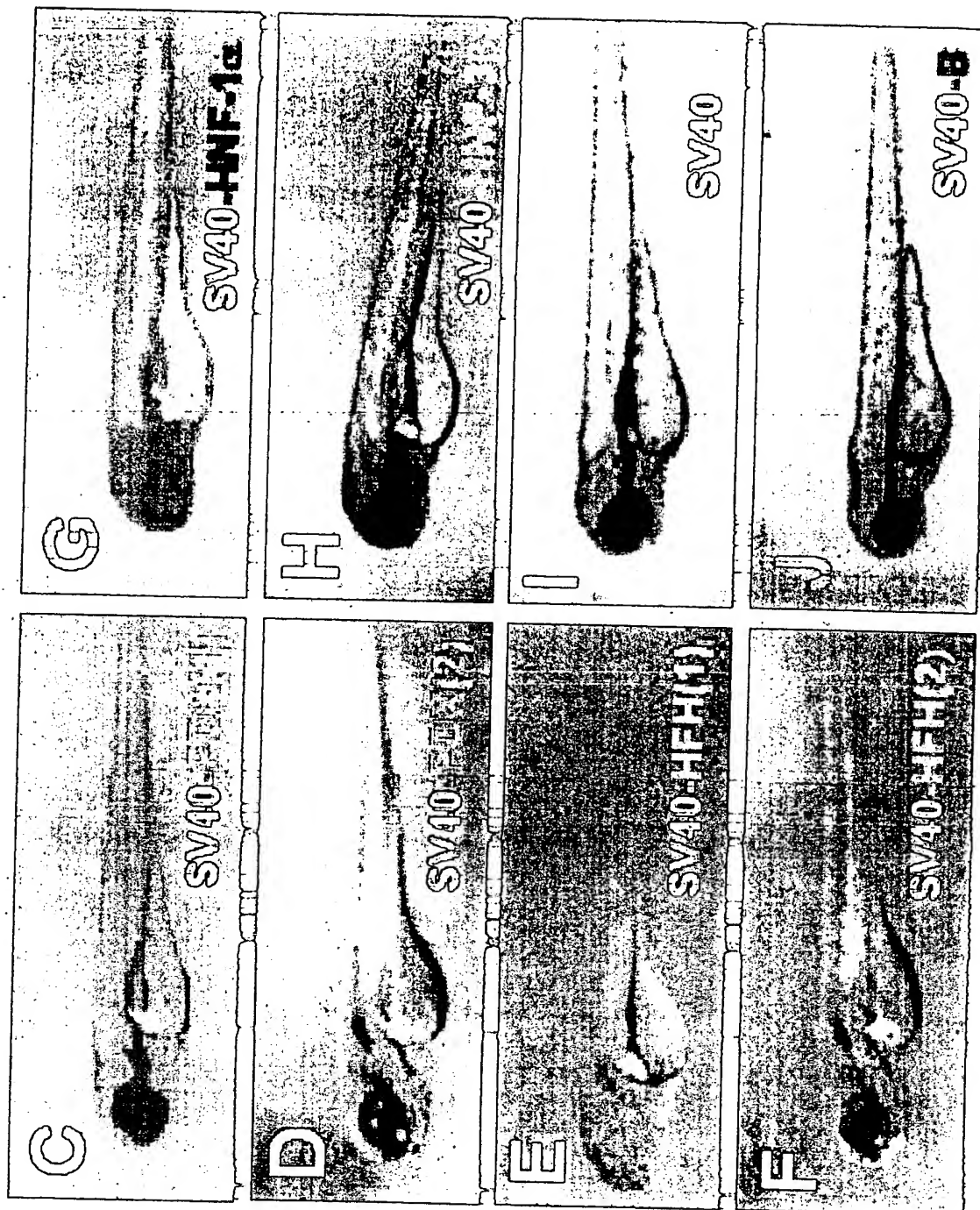


Figure 13 (continued)

Inventor: Jen-Leih WU et al.  
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